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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,297	03/11/2002	Osamu Kobayashi	P67421USO	1654

136 7590 08/22/2003

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WASHINGTON, DC 20004

EXAMINER

PATEL, VISHAL A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,297

Applicant(s)

KOBAYASHI ET AL.

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obata et al (US. 5,860,656) in view of Riesing.

Obata discloses a lip-type high pressure seal comprising an annular metallic casing (19), an annular sealing lip secured to the casing (9), the sealing lip being made of a highly gas barrier, non-elastomeric, polymer material (made of polytetrafluoroethylene and filler, furthermore a porous lip seal would have a low gas barrier compared to a PTFE lip seal, so PTFE is a highly gas barrier, applicant uses highly gas barrier as a relative term); and a secondary sealing lip (10).

Obata fails to disclose the sealing lip having a liner. Riesing disclose a lip seal having a liner made of PTFE. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the sealing lip of Obata to have a liner as taught by Riesing to reduce friction between the sealing lip and the shaft (see Riesing).

Regarding claims 12-13 (method disclosed by Obata and Riesing):

The method for establishing fluid seal between a housing and a shaft, comprising:

providing a lip-type seal having an annular sealing lip made from a highly gas barrier, non-elastomeric, polymeric material;

lining the inner circumferential face of the sealing lip with a low friction lining;

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installing the lip-type seal between the shaft and the housing in such a manner that only the low friction lining is brought into contact with the shaft;

applying a gas pressure higher (fluid R) than about 3 Mpa to the fluid side of the seal as the shaft and the housing are rotated relative to each other to thereby cause the low friction lining to resiliently follow any shaft run-out under the action of high pressure gas, while substantially preventing permeation (to have gas pressure at about 3Mpa is just a matter of design choice);

the sealing lip causes the low friction lining into tight contact with the outer periphery of the shaft under the action of high-pressure gas to thereby establish a static seal.

Regarding claims 2-3:

Obata and Riesing disclose the claimed invention except the gas permeability coefficient of the lip seal is $1.0 \times 10^{-13} \text{ cm}^3\text{-cm/cm}^2\text{-sec-pa}$. Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a gas permeability coefficient of the lip seal is $1.0 \times 10^{-13} (\text{cm}^3\text{-cm/cm}^2\text{-sec-pa})$ as a matter of design choice.

3. Claims 2-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obata and Riesing as applied to claim 1 above, and further in view of Holzer (US. 4,750,747).

Obata and Riesing disclose the invention substantially as claimed above but fail to disclose that the sealing lip is made of polyamide. Holzer teaches to have a lip seal made from material such as PTFE or polyamide. It would have been obvious to one having ordinary skill in

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the art at the time the invention was made to have the sealing lip of Obata to be made of polyamide, since have a sealing lip made of rubber or PTFE or polyamide is art equivalent and only requires routine testing which is with in one having ordinary skill in the art (column 4, lines 55-60 of Holzer).

Regarding claims 2-3:

Obata, Riesing and Holzer disclose the claimed invention except the gas permeability coefficient of the lip seal is $1.0 \times 10^{-13} \text{ cm}^3\text{-cm/cm}^2\text{-sec-pa}$. Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a gas permeability coefficient of the lip seal is $1.0 \times 10^{-13} (\text{cm}^3\text{-cm/cm}^2\text{-sec-pa})$ as a matter of design choice (picking a particular polyamide would be with in one having ordinary skills in the art).

Response to Arguments

4. Applicant's arguments filed 7/23/03 have been fully considered but they are not persuasive.

Applicant argument that the first sealing lip is 10 is not persuasive, since in the rejection mailed on 4/3/03, the first sealing lip is 9 and is made of PTFE.

Applicant argument against Obata are not persuasive since applicant only claims a material to have a highly gas barrier (this is a relative term), this would be the case since HNBR or PTFE are a highly gas barrier compared to a porous lip seal, such as a foam rubber.

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Applicant argument against Obata that it does not disclose polyamide lip seal is correct but this is clearly taught by Holzer.

Furthermore even if applicant considers that Obata has a first sealing lip (10) and the second sealing lip (9), Holzer specifically teaches choosing a material of a sealing lip would be a matter of environment and empirical testing (Holzer teaches a lip seal to be made of rubber elastic material or polytetrafluoroethylene or polyamide).

Applicant argument are not persuasive since Riesing discloses that a lip seal can be chosen from rubber-elastic material or polytetrafluoroethylene or polyamide after empirical testing (column 4, lines 55-60).

Furthermore evidence is shown by Goodman to used a lip seal made of polyvinylidene fluoride.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (703) 309-3179.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: 703-872-9326, for formal communications for entry before Final action: or,
703-872-9327, for formal communications for entry after Final action.

For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**" and fax to: 703-746-3814.

Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP
August 18, 2003


Anthony Knight
Supervisory Patent Examiner
Tech. Center 3600